

**Response to Examiner's Remarks**

35 U.S.C. 102(b) Rejections of Claims 1-2, 4, 13-14 and 37-38 over Gago. In response to the Examiner's rejections of the referenced claims as being anticipated by Gago (USP 4,470,839) under 35 U.S.C 102(b), the Applicant traverses the Examiner's rejections for the reasons stated below.

As claim 1 is the most generic independent claim of the present invention evaluated by the Examiner relative to the prior art of Gago, the Applicant has rewritten and amended Claim 1 herein in a manner that clearly distinguishes the present invention from Gago with supporting information from the inventor's specification as described below. By patentably distinguishing Claim 1, as amended herein, from the reference to Gago and thereby traversing the Examiner's prior 35 U.S.C. 102(b) rejection of Claim 1, the Examiner's 35 U.S.C. 102(b) rejections of Claims 2, 4, 13-14 and 37-38, (i.e., claims which are dependent on Claim 1), should be rendered moot.

A telephone conference was held on 22 July 2003 between the Applicant and the Examiner to specifically discuss the Examiner's prior 35 U.S.C. 102(b) rejection of Claim 1. Subsequently, the Applicant received a written Interview Summary of the 22 July 2003 telephone conference from the Examiner that was mailed on 30 July 2003. As per the MPEP Section 713.04, the Applicant hereby addresses the subject matter of the 22 July 2003 conference with the Examiner and the Examiner's 30 July 2003 summary thereof.

As per the Examiner's office action dated 24 April 2003, the Applicant acknowledges that the Examiner did not accept the Applicant's distinction of Claim 1 of the present invention (as rewritten in the Applicant's Amendment B filed on 4 February 2003) over Gago on the basis that the present invention was limited to a "dry mixture of discrete particles." The Examiner has argued that while Gago disclosed coated particles, because of language in Gago [column 4, lines 15-19], the said reference in Gago could be read to disclose such a dry mixture of discrete particles. The Applicant maintains the belief that Gago teaches away from a composition comprising a "dry mixture of discrete particles." Nonetheless, the Applicant has rewritten and amended Claim 1 in accordance with the examiner's suggestions during the 22 July 2003 conference with the Examiner and provided in the Examiner's 30 July 2003 summary thereof in order to advance prosecution of the application. Claim 1, as amended herein, more narrowly defines an important, albeit subtle, and non-obvious

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distinction between the present invention and Gago as discussed by the Applicant and the Examiner in the 22 July 2003 telephone conference and described in the Examiner's 30 July 2003 summary thereof. Specifically, Claim 1 has been rewritten such that the claimed composition is stated to comprise (i) "at least two" complex inorganic phosphates in component "b" of the composition and (ii) that the aforementioned complex inorganic phosphates are to be selected from the Markush group of "ringed metaphosphates and linear polyphosphates." The basis for (i) the claimed use of "at least two" complex inorganic phosphates can be found in the inventor's original specification (page 11-12; see page 12, second paragraph), as well as in the specific embodiments disclosed by the Applicant in examples 1-3 (pages 18-21 of the Applicant's specification). The basis for (ii) the Markush group of "ringed metaphosphates and linear polyphosphates" in the revised Claim 1 as rewritten herein is provided in both the pending dependent claim 3 (now canceled herein) and in the specification (page 11, second paragraph).

Noteworthy is that each of the different preferred embodiments of the inventor's composition described in the above-referenced examples 1-3, i.e., the "1" series composition, and more importantly the "4" and "5" series compositions, utilized at least two different complex inorganic phosphates. The basis and advantages for the use of multiple complex phosphates in the present invention are specifically disclosed in pages 11-12 of the inventor's specification. Example 1 in the Applicant's specification describes the general, observed advantages of the use of at least two complex phosphates in the composition of the present invention, i.e., by comparison of the "1" series composition (which included both sodium hexametaphosphate and sodium trimetaphosphate as complex phosphates) versus the "2" series composition (which did not include any complex phosphates). It is noteworthy that both the "4" and "5" series compositions described in the Applicant's Example 3 not only contained at least two complex phosphates, but in fact included three different complex phosphates: sodium hexametaphosphate, sodium trimetaphosphate and sodium tripolyphosphate (see Applicant's 37 C.F.R. §1.132 declaration).

By contrast to the present invention, Gago does not disclose a composition that comprises at least two complex phosphates or teach or otherwise provide evidence that the specific use of at least two complex phosphates is (or would be) particularly advantageous versus the use of only one complex phosphate. Each of the examples of Gago's invention disclose the use of only one

complex phosphate (sodium hexametaphosphate) as the "condensed phosphate" in the "coating agent" used to prepare the "coated particles" in accordance with Gago's teachings. Similarly, singular references to the term "condensed phosphate" are used throughout Gago's claims. In fact, Gago's dependent claims 3 and 4 make reference to the use of a single complex phosphate selected from the group consisting of sodium tripolyphosphate and sodium hexametaphosphate, as being the "condensed phosphate" contained in the "coating agent" of Gago's composition. Hence, the reference to Gago clearly does not anticipate the instant Claim 1 of the present invention as amended herein.

Based on the foregoing, the Applicant submits that the information provided and referenced herein clearly and patentably distinguishes the instant claim 1 of the present invention, as amended herein, so as to remove the Examiner's prior grounds for rejection under 35 U.S.C 102(b) over the reference to Gago. Accordingly, the Applicant submits that claim 1 should now be in condition for allowance, which action the Applicant respectfully requests.

With respect to the Examiner's rejections of the Applicant's claims 4, 13-14 and 37, as claims 4, 13-14 and 37 are dependent on claim 1, in the allowance of the subject matter of claim 1, as rewritten and amended herein, the Examiner's objections to claim 37 would be rendered moot.

With respect to the Examiner's rejection of the Applicant's claim 38 under 35 U.S.C 102(b), the Applicant notes that (i) claim 38 is dependent on independent claim 21, (not claim 1), and (ii) the Examiner has not rejected claim 21 (over Gago) under 35 U.S.C 102(b). Hence, the Applicant opines that the Examiner's rejection of claim 38 under 35 U.S.C 102(b) appears to be in error.

35 U.S.C. 103(a) Rejections of Claims 1-4, 7-8, 13-14, 17-18 and 37-38. In response to the Examiner's rejections of the referenced claims as being obvious from Gago under 35 U.S.C 103(a), the Applicant, believes that the composition of Claim 1 of the present invention, as amended herein, is patentably distinct and non-obvious from the reference to Gago and the other references cited by the Examiner on the basis of the unexpected properties and advantages thereof of the present invention (among other factors) as described in the Applicant's prior writings and 37 C.F.R. §1.132

declaration. In particular, the unexpected properties of greater and longer oxygen-release profiles of the present invention were discovered through a number of experiments conducted by the inventor. The Applicant's 37 C.F.R. §1.132 describes the Applicant's experiments so as to make clear the patentable distinctions and non-obvious advantages of the present invention over Gago.

As claim 1 is the most generic and independent claim on which the other claims (except claim 38) are dependent, the Applicant has provided arguments to traverse the examiner's 35 U.S.C 103(a) rejection of claim 1 over Gago with supporting information from the inventor's specification as described below. Should the Applicant's arguments to traverse the examiner's 35 U.S.C 103(a) rejection of claim 1 be deemed persuasive, the examiner's rejections of dependent claims 3-4, 7-8, 13-14, 17-18 and 37 would be rendered moot.

First, the Applicant submits that the instant claim 1 as rewritten and amended herein more narrowly defines the subject matter of the present invention so as to be patentably distinct and non-obvious from Gago. The new limitation to instant claim 1 as amended herein, i.e., the restriction to the use of at least two complex inorganic phosphates, is also non-obvious from Gago or the other references cited by the Examiner in consideration of the inventor's empirical experimentation and unexpected results thereof among other factors (see Applicant's 37 C.F.R. §1.132 declaration).

Second, in view of the new limitations to claim 1 herein, as well as the information provided in the Applicant's 37 C.F.R. §1.132 declaration, the inventor believes that the disclosures in the inventor's specification concerning the use of complex phosphates in component "b" of the inventor's composition as a multi-functional component, e.g., (i) as a more effective, biologically hydrolyzable forms of nutrient phosphorus for microorganisms (page 11, second paragraph); (ii) as sequestering / anti-scaling agents (page 11, third paragraph), and (iii) as surfactants of varying strength (page 12, second paragraph) are clearly non-obvious from Gago. Gago does not disclose the use of at least two complex inorganic phosphates as in the instant Claim 1. In addition, Gago is silent with respect to the disclosed advantages (i) and (iii) above of the present invention. The Applicant's 37 C.F.R. §1.132 declaration provides information that describes the experimentation and unexpected results thereof that lead the inventor to develop the present invention. This information clarifies the non-obvious means by which the inventor determined the advantages of the use of at least two complex inorganic phosphates as in the instant Claim 1 of the present invention

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as well as how the present invention meets a long-felt need in the industry. The discoveries and advantages of the Applicant's invention, as summarized above, would not have been obvious from Gago or the other art cited by the Examiner (or any other art reference for that matter) in the absence of the research and empirical testing conducted by the inventor (see Applicant's specification and 37 C.F.R. §1.132 declaration).

In conclusion, in view of the information contained and referenced herein, the Applicant respectfully submits that the present invention is clearly non-obvious from Gago. In conclusion, the Applicant submits that the Examiner's prior grounds for rejection of the instant claim 1, as amended herein, under 35 U.S.C 103(a) over the reference to Gago, should now be removed. Accordingly, the Applicant submits that instant claims, i.e., claim 1 and its dependents, should now be in condition for allowance, which action the Applicant respectfully requests.

With respect to the Examiner's rejection of the Applicant's claim 38 over Gago under 35 U.S.C 103(a), the Applicant notes that (i) claim 38 is dependent on independent claim 21, (not claim 1), and (ii) the Examiner has not rejected claim 21 (over Gago) under 35 U.S.C 103(a). Hence, the Applicant opines that the Examiner's rejection of claim 38 over Gago under 35 U.S.C 103(a) is in error.

With respect to Claim 37 (which is alternatively dependent on claims 1-20), the advantages of the inventor's composition in the forms of the granules, briquettes, tablets, capsules, and/or pellets and like is repeatedly disclosed throughout the inventor's application, discussed in the Applicant's prior amendments and 37 C.F.R. §1.132 declaration. A detailed discussion of the supporting information for Claim 37 is provided in pages 16-17 of the specification and further disclosures are provided in examples 1-3 (pages 21-23).

Examples 1-3 in the inventor's specification (pages 1-3) describe various advantages of different embodiments of granular forms of the inventor's composition in accordance with claims 1 and 37 that are neither anticipated by or obvious from Gago. In particular, the previously unexpected advantages of the more "stable" granular forms of the inventor's composition are described in the inventor's example 3 (page 23, tables 1-2, figures 2-3). These preferred granular

embodiments of the inventor's composition are specifically disclosed as the low disintegrant / low-disintegration rate "4" series embodiment of the present composition (page 23, example 3, table 1, figure 2) and the even more stable, no-disintegrant added "5" series composition (page 23, example 3, table 2, figure 3). The most surprising and unexpected observation was that the more stable granular forms of the composition produced higher levels of oxygen for longer time periods (example 3, page 23, tables 1-2, figure 2-3) than the disintegrating-granular form of the composition (see example 1, page 21). It was further observed that the "5" series compositions, i.e., the most stable granular form of the composition without the addition of a disintegrant, was observed to provide the best overall handling and oxygen-release characteristics. Additional details on the experimentation and unexpected results thereof that lead to the non-obvious advantages of the instant claims of the present invention is provided in the Applicant's 37 C.F.R. §1.132 declaration.

Example 3 also underscores another unanticipated and non-obvious advantage of the more stable granular forms of the inventor's composition, i.e., the embodiments of the "4" and "5" series compositions as described in example 3--when such forms of the composition are applied to a treatment well within a filter socks, the properties of the composition prevented the filter sock from swelling and becoming stuck in the test wells. This is a very important advantage of the present invention which overcomes a specific and current problem in the environmental-remediation field, as the most widely used active-oxygen material containing filter-sock products currently on the market have a documented history of problems associated with swelling and becoming stuck in treatment wells (see discussion on page 17 of the specification as well as the Applicant's 37 C.F.R. §1.132 declaration).

Additional information concerning the aforementioned advantages of the inventor's composition, namely the unanticipated improvements in oxygen-release properties through the combined formulation and (preferred) stable granular form of the composition, were provided in the Applicant's prior amendment B (Paper No. 8) submitted on 4 February 2003, incorporated herein by reference. Additional details on the experimentation and unexpected results thereof that lead to the non-obvious advantages of the instant claims of the present invention is provided in the Applicant's 37 C.F.R. §1.132 declaration.

Another difference between the present invention and that of Gago not previously discussed is highlighted by the disclosures in Column 2, Lines 10-16 of Gago's specification, in which Gago states that the oxygen release period would be tailored to cover the period from seed germination up to root development, "without the release of oxygen extending substantially beyond the period during which it is useful." This disclosure is consistent with Gago's repeated disclosures concerning a "coating agent" and "coated particles," i.e., as the coatings would likely provide for a more targeted and limited period of oxygen release relative to the composition of the present invention, but differs from the present invention. By contrast to Gago, a critical objective and advantage of the composition of instant claim 1 of the present invention is to extend the period of oxygen release as long as practical.

Another advantage of the preferred granule, briquette, pellet, capsule, or tablet forms of the inventor's composition is that they provide additional means of varying the release-rate profiles of the sources of active-oxygen and complex phosphates. Specifically, the rate at which the preferred forms of the inventor's composition disintegrate subsequent to their application and/or upon contact with water can be varied via the addition of a disintegrant (Page 16, Lines 9-32 of the inventor's application). Relatively minor variations in the amount of disintegrant used in the composition can have significant effects on the rate of disintegration of the preferred forms of the composition. For example, by incorporating pre-gelled starch in the granular form of the inventor's composition in amounts from 2% to 4% by weight, the granules rapidly and completely disintegrated within several minutes after their application to water, whereas granules with 1% pre-gelled starch disintegrated relatively slowly and remained partially intact for more than 4 weeks (Page 16, Lines 22-32; Examples 1-2). Without the pre-gelled starch disintegrant altogether, i.e., the "5" series composition, the inventor's granules remained largely intact more than 4 weeks after application to water. This improved functionality enables the time-dependent release profile(s) of the "active" ingredients to be varied so as to optimize the remediation of contaminants based on site-specific factors or factors pertaining to the specific waste-stream, media and/or the contaminants therein. Neither Gago or the other prior art references cited by the Examiner teach this aspect of the present invention, nor would this advantage of the present invention be obvious from these references.

The Applicant's invention is also distinguishable from Gago and the other prior art cited by the examiner by a number of unexpected and unanticipated results discovered by empirical testing of the composition in ground-water remediation field trials (e.g., inventor's application Page 17, Line 6-11; Examples 2-3; Claims 37-38). In particular, these unanticipated results and advantages of the present invention concern the relatively coarse and long-lasting granular forms of the composition. A most unexpected finding was that the longer lasting granular forms of the inventor's composition (e.g., Example 3) provided for a greater release of oxygen over a longer period of time than was expected relative to the quick-disintegrating forms of what was otherwise mostly the same composition (e.g., Example 1). Noteworthy is that the field trial described in the Applicant's Example 3 was ongoing at the time the subject application was filed. The results of the trial described in Example 3 ultimately showed that the inventor's "4" and "5" series compositions continued to release high levels of dissolved oxygen ( $\geq 13$ -20 mg/L) for more than 250 days. This result was most unexpected, as the consensus of expert opinions gathered by the inventor during the time when the invention was being developed was that the higher total surface area of the fine-powdered forms of other oxygen-release materials (including other calcium- and magnesium-peroxide containing products and presumably the inventor's composition as well) would result in a greater release of oxygen. These unexpected and unanticipated results support the Applicant's argument that the present invention would not be obvious from Gago alone or in combination with the other prior art references cited by the Examiner.

These unexpected and beneficial results of the present invention have lead the inventor to propose the following working hypotheses concerning the advantages of at least two complex phosphates in the present invention (as opposed to one complex phosphate as per the reference to Gago):

- i. the incorporation of multiple complex phosphates present within the matrix of the instant composition provides improved means for porous channels to form which enhance and prolong the release of oxygen from the composition;
- ii. the use of multiple complex phosphates provides improved means of preventing or minimizing the formation of scales and precipitates on the surfaces of the inventor's



granular composition that could cause oxygen "lock up," further providing for the enhanced release of oxygen.

Based on the foregoing, it is the inventor's belief that the combination of the formulation and coarse granular form of the granular forms of the inventor's composition in accordance with Claim 37 of the present invention serve to sustain and enhance the activation and release of oxygen for extended periods of time, thereby providing improved oxygen-release characteristics for a wide variety of end uses and applications. Neither Gago or the other prior art references cited by the Examiner, alone or in combination, teach the aforementioned advantages of the present invention, nor would such advantages be obvious from these references.

The slow-disintegrating variants of the preferred forms of the inventor's composition are particularly well suited for environmental remediation applications such as the use of the composition in permeable reactive barrier (PRBs) for treatment of ground water, leachate seeps, and similar discharges of acid-mine drainage (Page 16, Line 33 - Page 17, Line 5). In such "PRB" applications, the inventor's granules provide a "reactive" treatment zone of higher permeability relative to the surrounding materials to enhance flow of contaminated fluids through the granular composition, thereby improving treatment. Neither Gago or the other prior art references cited by the Examiner, alone or in combination, teach this advantage of the present invention, nor would it be obvious from these references.

Another benefit of the long-lasting granular forms of the inventor's composition is that they are easier to use in environmental-remediation applications in which the composition is used in application devices such as filter socks, canisters, and cartridges. Prior to development of the present invention, numerous persons in the remediation field informed the inventor that filter socks containing "a 'leading' slow-release oxygen product" sold on the market had a tendency to swell considerably and become stuck inside the wells in which they were installed. As described in the Applicant's specification and Example 3, when applied within filter socks, the long-lasting granular forms of the inventor's composition were observed to retain their shape and porosity, which prevented the filter socks from swelling and becoming stuck in the treatment wells. This is an important and significant advantage of the present invention, particularly with respect to

ground-water remediation applications, relative to the prior art. Beyond the observation that these granular variants of the inventor's composition hold their shape for long periods of time, another possible explanation for this benefit of the present invention is that there is sufficient "sacrificial" internal void space within the granules that prevents the composition from swelling and causing the application device to become stuck. Hence, this aspect of the present invention provides clear advantages over the prior art for environmental remediation applications in which the composition is applied within application devices that are installed within wells, boreholes, pipes, manholes and the like. These advantages of the present invention would not be obvious from Gago or the other prior art references cited by the Examiner, alone or in combination.

In view of the information presented above, the Applicant submits that the instant claim 37 of the present invention would not be obvious from Gago. In conclusion, the Applicant submits that the amendments to claim 1 herein and information provided above should remove the Examiner's prior grounds for rejection of the instant claims under 35 U.S.C 103(a) over the reference to Gago. Accordingly, the Applicant submits that instant claims should now be in condition for allowance, which action the Applicant respectfully requests.

35 U.S.C. 103(a) Rejections of Claims 5, 11-12, and 15-16. In response to the Examiner's rejections of claims 5, 11-12, and 15-16 as being obvious from and unpatentable over Gago (USP 4,470,839) in view of Felix et al. (USP 5,725,885) under 35 U.S.C 103(a), the Applicant believes that the instant claims of the present invention, as amended herein, are patentably distinct and non-obvious from the reference to Gago in view of Felix et al. on the basis of the unexpected properties and advantages thereof of the present invention (among other factors) as described in the Applicant's prior writings and 37 C.F.R. §1.132 declaration as well as for the reasons stated below.

First, the Applicant hereby reiterates the arguments to traverse the Examiner's 35 U.S.C 103(a) rejections of claims 1-4, 7-8, 13-14, 17-18 and 37-38 presented above.

Second, there is no suggestion in the art references of either Gago or Felix et al., as cited by the Examiner, to combine these references so as to derive the present invention.

Third, given that Gago is non-analogous art relative to the field of the present invention, it would not be expected that a person of ordinary skill in the Applicant's field of art would seek to combine the references of Gago and Felix et al. to derive the present invention.

Fourth, in the allowance of Claim 1 for the numerous reasons described above by the Applicant, the Examiner's rejections of Claims 5, 11-12 and 15-16 would be rendered moot.

Like the present invention, the patent to Felix et al. discloses a composition and means for its manufacture and use that pertain to the field of environmental bioremediation. Though Felix (USP 5,725,885) is in the field of the present invention, and therefore non-analogous to the field of Gago, Felix et al., like Gago, teaches away from the present invention in that they make numerous and detailed disclosures concerning a coated composition. Felix et al. teaches a coated composition in which an "encapsulation coating" comprised of lipophilic materials such as oleic acid, stearic acid and palmitic acid is sprayed onto a "core of microbial available nutrients." Given that (a) both Gago and Felix et al. teach away from the present invention by disclosing coated compositions, and (b) these references are from non-analogous fields of art, it is therefore extremely unlikely that a person of ordinary skill in the field of the present invention would seek to combine these references so as to derive the uncoated composition of the present invention. Moreover, the combination of these references, however unlikely, would still not produce the non-obvious and unexpected results of the inventor's experiments which led to the composition present invention (see the Applicant's 37 C.F.R. §1.132 declaration).

In view of the information presented and referenced above, the Applicant submits that the instant claims would not be obvious from Gago in view of Felix et al. In conclusion, the Applicant submits that the amendments and information provided and referenced herein should remove the Examiner's prior grounds for rejection of the instant claims under 35 U.S.C 103(a). Accordingly, the Applicant submits that instant claims should now be in condition for allowance, which action the Applicant respectfully requests.

35 U.S.C. 103(a) Rejections of Claims 6, 9-10, and 21-34. In response to the Examiner's rejections of claims 6, 9-10, and 21-34 as being obvious from and unpatentable over Gago (USP 4,470,839) in view of Felix (USP 5,725,885) and further in view of Fusey (USP 3,796,637) and Gaffar et al.

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(5,648,064) under 35 U.S.C 103(a), the Applicant believes that the instant claims of the present invention, as amended herein, are patentably distinct and non-obvious from the reference to Gago in view of the references to Felix, Fusey and Gaffar cited by the Examiner on the basis of the unexpected properties and advantages thereof of the present invention (among other factors) as described in the Applicant's prior writings and 37 C.F.R. §1.132 declaration as well as for the reasons stated below.

First, the Applicant hereby reiterates the arguments to traverse the Examiner's 35 U.S.C 103(a) rejections of (i) claims 1-4, 7-8, 13-14, 17-18 and 37-38 and (ii) 5, 11-12, and 15-16 presented above.

Second, there is no suggestion in either Gago or Felix et al. to combine these references so as to derive the present invention, nor are there suggestions in either Fusey or Gaffar et al. to combine these references with either one another let alone with both Gago and Felix et al.

Third, given that Gago and Gaffar et al. are non-analogous art relative to the field of the present invention, it would not be expected that a person of ordinary skill in the Applicant's field of art would seek to consult let alone combine these references with either Felix et al., Fusey or both so as to somehow arrive at the present invention.

Fourth, in the allowance of Claim 1 for the numerous reasons described above by the Applicant, the Examiner's rejections of Claims 6, 9-10, and 21-34 would be rendered moot.

Like Gago, the patent to Gaffar et al. is non-analogous art relative to the present invention. Gaffar et al. disclose a "two component whitening dentrifice composition" that incorporates a "manganese coordination complex" to activate the peroxygen compound which "accelerates the release of active oxygen" (see abstract of Gaffar et al., emphasis added). Hence, Gaffar et al. teaches away from the present invention, as the present invention provides means for the slow and sustained release of active oxygen and complex phosphates. Furthermore, there is no suggestion in Gaffar et al. to combine the art disclosed therein with the art of Gago, Felix et al. or Fusey.

Like the present invention and that of Felix et al., the patent to Fusey discloses compositions and means for its manufacture and use that pertain to the field of environmental bioremediation. Gago makes no disclosures concerning the use of an inorganic source of nitrogen. With respect to the subject matter of the present invention, e.g., Claim 6, both Felix et al. and Fusey teach away

from the present invention by disclosing the use of ammonium-containing compounds as sources of nutrient nitrogen. In the preferred forms of the present invention, the source of inorganic nitrogen is ammonium-free and is selected from sodium nitrate, sodium-potassium nitrate, potassium nitrate and other nitrates (see Page 12, Line 23 - Page 13, Line 2). As disclosed by the Applicant, such ammonium-free sources of inorganic nitrogen are preferred so as to promote biologically mediated denitrification processes which can enhance and compliment the oxygen-based processes facilitated by the simplest preferred embodiment of the composition, i.e., the composition of Claim 1. None of the prior art references make any disclosures pertaining to the use of denitrification-based chemistry or bioremediation processes. Similarly, none of the prior art references cited by the Examiner disclose the preferred use of such ammonium-free sources of nitrogen nor do they disclose the combination of ammonium-free sources of nitrogen with a solid-chemical source of active oxygen and complex phosphates, as in the present invention. Moreover, as described in the inventor's specification, although denitrification is an anaerobic process, it can also occur in oxygen-rich environments, such that the ammonium-free nitrogen component of the composition of Claim 6 provides a distinct and non-obvious advantage of the present invention over the prior art, let alone from the extremely unlikely combination of the references cited by the Examiner.

In view of the information presented above, the Applicant submits that the subject claims of the present invention are not obvious from the Gago, Felix et al., Fusey or Gaffar et al. references alone or in combination. The Applicant submits that the instant claims of the present invention are patentably distinct and non-obvious from the reference to Gago in view of the references to Felix, Fusey and Gaffar for the reasons described above, as well as the unexpected properties and advantages thereof of the present invention as described in the Applicant's prior writings and 37 C.F.R. §1.132 declaration. In conclusion, the Applicant submits that the amendments and information provided and referenced herein should remove the Examiner's prior grounds for rejection of the instant claims under 35 U.S.C 103(a). Accordingly, the Applicant submits that instant claims should now be in condition for allowance, which action the Applicant respectfully requests.

**Conditional Request for Constructive Assistance**

It is the Applicant's belief that this Amendment provides a complete response to the Examiner's Office Action mailed 24 April 2003 and Interview Summary mailed 30 July 2003. The Applicant also submits that the claims of Group I, as amended herein, define the subject matter of the present invention in a manner that is proper, definite and distinguishable over the prior art. If, for any reason, this response is not deemed complete or this application is not believed to be in full condition for allowance, the Applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to MPEP § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

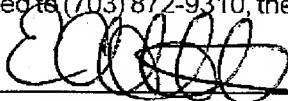


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24 September 2003



Eric Christian Hince, Applicant